Induction Loop Certification

DL107, DL207, DL210 2.0 CALIBRATION AND IEC SPEC 60118-4

This document certifies that the PLA DL210NET has been calibrated to the loop, the system meets the IEC Specification 60118-4, the facilities manager has been informed about system calibration, and the facilities manager is satisfied with the audio performance.

Perform these steps and sign off at the bottom of page 3 when complete. If any part of the test fails, review and correct the installation (if necessary) or notify the installer to do so.

Step 1. Normal Room Conditions

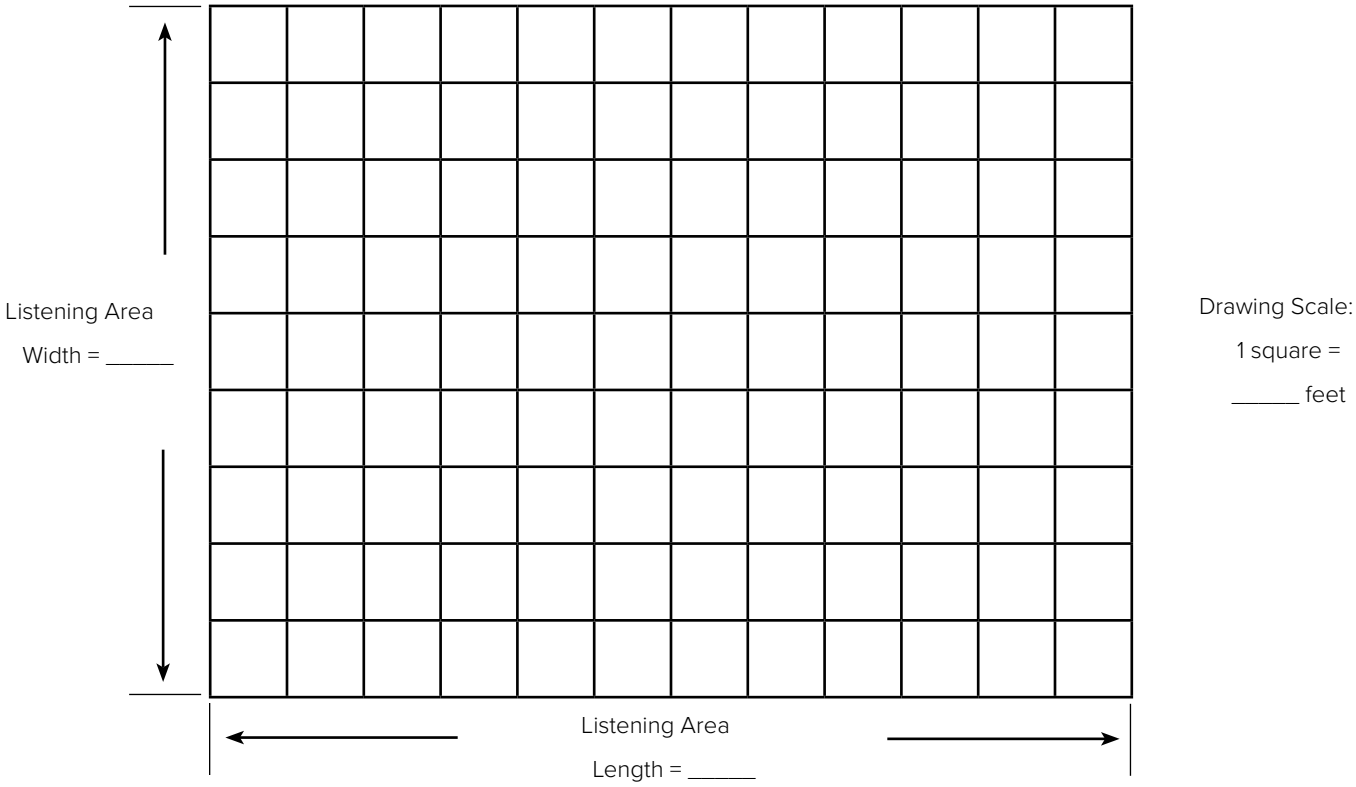
Ensure that all electrical equipment is running, and lights turned on as normal for the venue while testing is being performed. ***Make sure the PLA DL210NET Loop Amplifier is OFF.***

Step 2. Sketch the Room with the Measurement Positions

Use the grid below and mark the dimensions of the room and indicate scale. Clearly mark the center of the listening area (Position 1) and five additional measurement positions (Positions 2-6). This diagram will be used for all measurements during this certification process.

ROOM DIAGRAM - MEASUREMENT POSITIONS

(indicate scale and dimensions)



Note: Make sure that you are holding the field strength meter (FSM) in a vertical orientation at 5 feet above the finished floor.

Step 3. Background Noise Check

With the FSM set at -20dBA (A-weighted), walk around the seating area and observe the background noise level.
Was the maximum reading greater than -32dB (reference 400 mA/m)? Yes/No _____

If "yes", if the level is between -32dB and -20dB, have the sources of EMI (Electromagnetic Interference) investigated and inform the facilities manager of the devices causing the noise. This noise level may be acceptable as is, or it may be corrected by turning off the devices causing the noise. If the background noise is above -20dB, it is highly recommended to fix the source of the problem before beginning the commissioning process, as background noise in this range will begin to defeat the purpose of the loop system. When the background noise is fixed, return to this step and check the background noise again.

If "no", test passes. Measure at the hearing plane (5 ft height) with the FSM at the positions on the Room Diagram, and record the actual readings in the "BACKGROUND NOISE" table below.

BACKGROUND NOISE	Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
Field Strength (dB)						

Step 4. Initial Field Strength @ 1kHz

Turn the PLA DL210NET Loop Amplifier On. Set the FSM to 0dB and NORM settings on the buttons for the following measurements/readings. For steps 4-6, use the front controls on the amplifier, calibration window in the PC Mixer App, or the iOS App on an iPad. Set the test tone to 1kHz. Does the Field Strength = 400mA/m ±3dB @1kHz, at the center and 5 typical listening positions within the looped area? At the same positions as measured in Step 2, measure at the hearing plane (5 ft height) with the FSM at these positions and record the initial field strength readings:

INITIAL FIELD STRENGTH @ 1 kHz	Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
Field Strength (dB)						

Are the results within ±3dB of 400mA/m at 1kHz? _____
If "yes", test passes. If "no", adjust the output level of the amplifier until this spec is met.

Step 5. Frequency Response
Does the Frequency Response = ±3dB at 100Hz, 1kHz and 5kHz? (Yes/No) _____
Use the same positions as were used in step 4. Using the front controls on the amplifier, calibration window in the PC Mixer App, or the iOS App on an iPad, set the frequency to the first frequency (100 Hz) and measure the field strength at the hearing plane (at 5 feet) with the FSM at the first position in the listening area. Repeat this process for each position, then change to the next frequency and record the FSM readings:

INITIAL FREQUENCY RESPONSE	Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
100 Hz						
1 kHz						
5 kHz						

Are the results within ±3dB of 400mA/m (1 kHz reference) at each frequency? (Yes/No) _____
If yes, test passes. If not, adjust the equalization in the amplifier at these frequencies, until this spec is met. When finished, record the final readings below:

FINAL FREQUENCY RESPONSE	Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
100 Hz						
1 kHz						
5 kHz						

Step 6. Final Field Strength @ 1kHz

Does Field Strength = 400mA/m ±3dB @1kHz, at the 6 listening positions within the looped area? (Yes/No) _____
At the same positions as measured in Step 4, measure at the hearing plane (5 ft height) with the FSM at these positions and record the actual (final) readings:

FINAL FIELD STRENGTH @ 1 kHz	Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
Field Strength (dB)						

Step 7. System Use - Subjective Test

Instead of using the internal test tones, use the actual signals from the system (such as the source deck or live microphone) and adjust the input signal to achieve the desired signal strength level.

Step 8. Final Sign-Off

Have the Facility Manager verify the audio quality for themselves with a loop receiver. Facility Manager Initial _____.

Instruct the Facility Manager on what the output faders do in the PC Mixer App, that they are directly tied to calibration, and that ***moving these faders takes the loop amplifier out of calibration.*** If more volume is needed, adjust the Input Faders Only.
Facility Manager Initial _____.

I certify that the amplifier has been calibrated to the loop, the system meets IEC Specification 60118-4, and the audio performance is satisfactory.

Field Technician Name (print): _____

Company (print): _____

Field Technician Signature: _____

Date: _____

Facility Manager Name (print): _____

Facility Name (print): _____

Facility Manager Signature: _____

Date: _____